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ANNUAL STATISTICAL RETURNS

AND

SHORT NOTES ON VACCINATION

IN

BIHAR AND ORISSA

FOR THE YEAR

1915-16

BY

W. C. ROSS, MAJOR, I.M.S.,

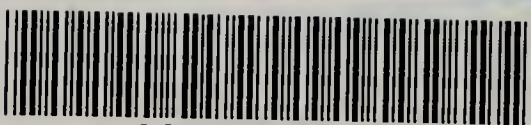
Offg. Sanitary Commissioner, Bihar & Orissa.

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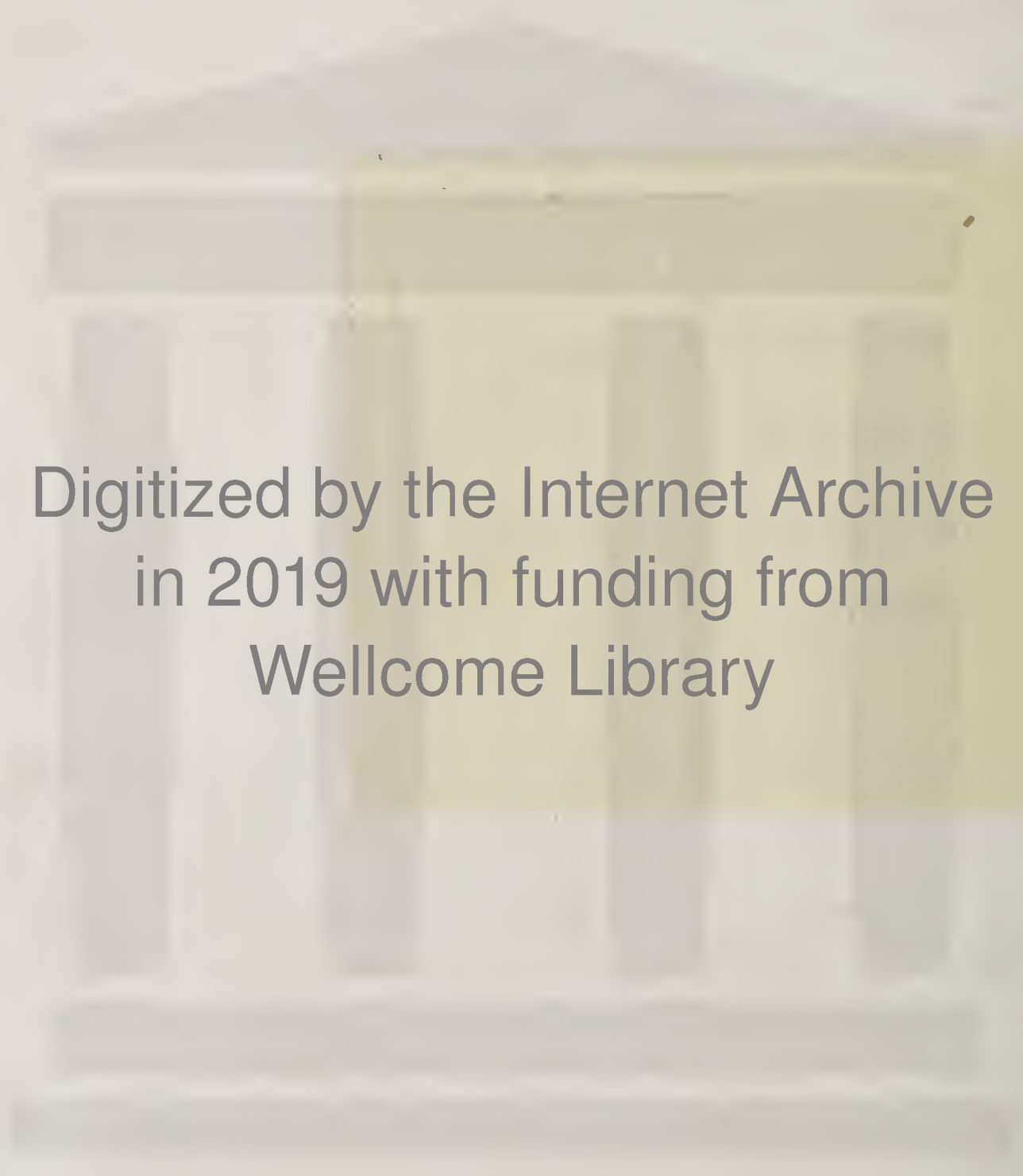


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ANNUAL VACCINATION REPORT

BIHAR AND ORISSA.

1915-16.

1. Staff.—Lieutenant-Colonel E. C. Hare, I.M.S., was in charge of the Department from the 1st April to 16th May 1915, and from 26th November 1915 to 2nd February 1916: Dr. S. N. Tiwari from the 17th May to 25th June 1915 and Major W. C. Ross, I.M.S., from the 26th June to 25th November 1915 and again from 3rd February till the end of the year.

The office of Deputy Sanitary Commissioner, Bihar Circle, was held by Dr. S. N. Tiwari throughout the year. The office of Deputy Sanitary Commissioner, Chota Nagpur Circle, and charge of the Vaccine Depôt at Namkum were held by Dr. T. Sebastian throughout the year. The office of Deputy Sanitary Commissioner, Orissa Circle, was held by Dr. B. P. Mazumdar during the year.

The inspecting staff consisted of 20 District Inspectors of Vaccination and 65 Sub-Inspectors of Vaccination (including 3 deputed for duty at the Vaccine Depôt) in addition to the 3 Sub-Assistant Surgeons combining vaccination inspection with other duties in Angul. During the year 2 additional appointments to the cadre were sanctioned in order to provide Sub-Inspectors for the new Subdivision at Simdega and for the compulsory vaccination area in Patna and these are included in the above statement.

The total number of vaccinators employed in the Province during the year were 990 licensed and 184 paid against 999 licensed and 142 paid in the previous year.

In municipalities and in the districts of Puri, Sambalpur and part of Singhbhum vaccination was done by paid vaccinators, but otherwise the work throughout the Province was carried out under the licensing system except for the employment of paid vaccinators for short periods to deal with outbreaks of small-pox.

2. Operations performed.—The total number of operations performed during the year amounted to 1238419 as compared with 1314042 last year. The decrease amounts to 25623 and is in my opinion largely due to the deterioration in discipline and in energy of the inspecting staff.

Of the total number of operations 1255710 were performed by the Vaccination Department as compared with 1295179 last year: 1205202 operations were primary and the remaining 50503 were revaccinations as against 1242316 primary and 52863 revaccinations last year.

Primary operations and re-vaccinations both fell off during the year by 37114 and 2355, respectively. Of the total operations performed (1255710) 1221018 equal to 97.23 per cent. were successful as compared with 1270949 equal to 98.12 per cent. last year. The number of operations performed in municipalities fell by 1687 as compared with last year's returns. The ratios of success in municipalities were 96.66 for primary and 44.50 for revaccination as compared with 99.13 for primary and 55.83 for revaccination in rural areas.

3. Vaccination in Districts.—During the year under report, vaccination has been most successfully carried out in the Patna Division; from all the districts of which an increase is reported in the number of operations performed, *viz.*, Gaya (9769), Patna (11394) and Shahabad (3498).

The Orissa Division on the other hand shows a very large decrease and the Cuttack district again heads the list with another large drop of 15967 in the number of operations performed. The districts of Balasore (9583) and Sambalpur (3660) both return the decreases noted against them and the districts of Puri and Angul are the only districts in this Division which show some increase of 5228 and 3337, respectively.

The Tirhut Division shows small decreases in all the districts except Champaran which returns a slight increase.

The Bhagalpur Division shows a large decrease in the Purnea district (8769) and small decreases in the Bhagalpur and Monghyr districts and a rise of 4594 in the return from the Santal Parganas.

The Chota Nagpur Division returns show small increases in the districts of Ranchi and Palamau and large decreases in the districts of Manbhum and Singhbhum amounting to 16352 and 6416, respectively. Hazaribagh district shows a small decrease of 1782.

4. Vaccination in towns and compulsory areas.—During the year under report the Vaccination Acts were extended to the area under the jurisdiction of the Jharia Mines Board and to the Patna and Phulwari Thanas of Patna District. Statement VII shows that during the year 25081 children under one year of age out of an available number of 29178 or 85·95 per cent. were successfully vaccinated.

The town of Bhagalpur again shows the smallest proportion of work done and the towns of Darbhanga, Hazaribagh and Chapra have given very unsatisfactory returns.

5. Protection of Infants.—Out of 1076026, the estimated number of children under one year available for vaccination, 624193 equal to 580·09 per 1000 were successfully vaccinated as compared with 629670 or 516·21 per 1000 in the previous year. The protection of infants in municipalities is separately shown in Statement VII and works out at a ratio of 859·59 per mille of the surviving infant population. The majority of Civil Surgeons report that there is considerable opposition to the early vaccination of infants and that there is a strong popular prejudice against the operation being performed on children under one year of age. Many Civil Surgeons and the Deputy Sanitary Commissioners also report that opposition to vaccination is chiefly confined to a few castes and sects such as illiterate Brahmins, Marwaris and a few Muhammadan communities, but that generally speaking vaccination is not objected to under normal conditions.

6. Incidence and mortality of small-pox.—During the last ten years the total number of deaths from small-pox in the districts of this Province has been 117785 from which it may be inferred that over 600000 cases of the disease occurred in that period.

During the first quinquennium the number of deaths was 83972 and during the second 33783. In the last quinquennium the mortality has risen during the five years as follows :—3088, 2741, 4347, 8979 and 14628.

The provincial ratios of the mortality from small-pox per 1,000 of population during the last five years have been ·08, ·06, ·11, ·22 and ·42 respectively.

7. Prevention of small-pox.—The constant and considerable mortality noted in the preceding paragraph is in my opinion a complete demonstration both of the insufficiency and of the inefficiency of the existing arrangements for vaccination.

It is well known—in fact it is an admitted axiom—that thorough vaccination can and does stamp out small-pox altogether and in the light of that knowledge and in face of the above facts there is great necessity for a more definite vaccination policy.

The inefficiency of the Department is being severely dealt with and action is being taken against a large number of officers (about 28). The departmental rules and regulations are being strictly enforced and the staff generally has been warned against laziness, neglect of duty and breach of rules. I anticipate that I can establish discipline and efficiency in the cadre within two years and I am confident that a considerable improvement in the returns will ensue.

At the same time I do not consider that small-pox can be effectively dealt with and stamped out unless vaccination is made compulsory throughout the Province and I would recommend that the Vaccination Act should be modified so as to extend the age within which vaccination is required to one year and

generally enforced, that vaccination should be free and that the vaccination staff in all the districts should be put on one consolidated provincial cadre for purposes of administration and work.

8. Inspection of work.—During the year under report the three Deputy Sanitary Commissioners inspected 133,895 primary vaccinations as against 8,781 in the previous year. The figures for the previous year were unusually low as there were only two Deputy Sanitary Commissioners and both of them were employed on special duty which kept them at headquarters during most of the inspecting season. The inspecting work done this year by the Deputy Sanitary Commissioners has been very comprehensive and they have submitted valuable reports on the efficiency of the staff and the arrangements in sixteen of the twenty-one districts in the province. Action has been taken on these reports in each case.

The Civil Surgeons of the Province have inspected during the year 82485 primary and 10265 revaccination operations which results compare favourably with last year's figures of 78646 primary operations and 7162 revaccinations. The inspecting staff of 85 officers inspected 877792 operations during the year. The officers of the inspecting staff generally and with but few exceptions are more or less ignorant of their duties, negligent and careless and have not hitherto attempted to do their work thoroughly and in accordance with the rules. Various orders and circulars have issued during the year but with comparatively little effect. Inspecting officers generally have failed to comply with the rules regarding the keeping of their diaries and especially with the rule requiring an inspection note on the work, capacity and conduct of each vaccinator and subordinate officer whose work they inspected.

A class of instruction will be held at Patna in July at which the entire staff will be required to attend and at which the officers will be instructed in detail in the rules and regulations, the nature and scope of their duties and the standard of efficiency and work expected from them. The class will be instructed by the three Deputy Sanitary Commissioners and I shall inspect it and endeavour to imbue the minds of the officers with some ideas of discipline and efficiency.

9. Supply of Vaccine.—The Vaccine Depôt at Namkum supplied the Province with vaccine throughout the year. 3127290 doses were made during the year and 1798239 doses were issued, chiefly in capillary tubes containing one dose each. A reserve supply of 1559488 doses has been built up, and there is now no fear of any failure in supply from epidemics or other causes.

The staff, the management and the technique of operation, have all been reorganised during the year with excellent results both in efficiency and in economy.

The number of calves required has been greatly reduced by the improvement of the technique in operating whereby more than double the amount of pulp is obtained from each calf, the vaccine has been further diluted after a series of experiments ensuring the safety of the procedure and the output of doses per calf has been raised from about 1,500 to over 4,000. There is a corresponding reduction in the cost for calves, fodder, etc., and also the difficulty of obtaining a sufficient number of calves has been obviated.

The number of doses produced has risen from 771696 to 3127290.

The number of doses issued has risen from 541259 to 1798239.

The number of calves required has fallen from about 150 to 180 per month for 12 months to under 100 per month for 9 months and the Depôt will in future remain closed from early in April till the end of June as the vaccine produced in the hot weather is not of good quality and also because a sufficient supply can easily be manufactured in the remaining 9 months of the year.

The number of calves used during the year was 1128 for 3127290 doses as against about 500 calves for 771696 doses during the previous year.

The working cost of the Depôt for the year amounted to Rs. 31,537-3-3 for 3127290 doses against Rs. 19,367-7-9 for 771696 doses in the previous year.

Sales of vaccine, calves, etc., resulted in the receipt of Rs. 4,637-2-3 and Rs. 4,964-9-8 are still owing for vaccine supplied during the year. The average cost per dose fell from 4·8 pies to 2·1 pies or to 1·8 pies if the actual receipts for sales are taken into account. A further reduction in the average cost per dose may be expected next year, but even now it compares most favourably with the cost of production in other Depôts in India.

The services of the Superintendent (on probation) were dispensed with in October 1915, and a new Superintendent, Dr. C. N. Banarji, was appointed in November 1915, who has proved to be a capable and careful officer and has worked very satisfactorily. The arrangements for the supply of calves were altered and the supply is now ample and regular from three contractors. Two epidemics of foot and mouth disease broke out during the year, and the Depôt was closed temporarily on both occasions.

The contract for the supervision of the refrigerating plant has been stopped and further economies in the reduction of the staff and the cost of packing are contemplated. During the year the diet of the calves was considerably increased, but the extra cost is more than repaid by the larger and better return of vaccine and by the saving of time in convalescence.

The issue of vaccine direct to vaccinators instead of to Civil Surgeons for redistribution, was begun during the year and will be continued. The primary cost to the Depôt is greater, but the ultimate cost is less and the saving of time is a matter of importance with glycerinated vaccine. I propose to use collapsible tin tubes in place of glass capillary tubes next year and have arranged for a supply. The glass tubes are expensive and trouble some to load, and they break in transit. I also propose to manufacture some lanolated vaccine next year as an experiment owing to the complaints received that glycerinated vaccine does not stand long hot journeys very well.

The great increase in output and the reorganisation of the entire system of working gave both Dr. Sebastian and Dr. Banarji a large amount of hard work, which was well and carefully done. These officers deserve great credit for the success of their efforts, and I have only to add that the work of the Depôt is now proceeding economically and smoothly and without fear of interruption.

10. Cost of the Department.—The total cost of the Department during the year as detailed in Statement II was Rs. 1,12,336 or Rs. 13,915 in excess of the previous year.

The cost per successful operation was Re. 0-1-5 against Re. 0-1-2 in the previous year, which is due to the increase in establishment *viz.*, :—one Deputy Sanitary Commissioner and his office establishment and two Sub-Inspectors of Vaccination.

11. General.—Better vaccination results may be expected from the present staff under more stringent supervision and more systematic control, but there is a limit to the possibilities in that direction under existing conditions, wherein vaccination is neither free nor compulsory, and the control of the staff and the work rests with Civil Surgeons in the districts.

With reference to the system of administration I am of opinion that it should be single and not dual, and I think that in most districts Civil Surgeons have little or no time to spare from their many and increasing medical responsibilities to accord the necessary time or attention to the detailed and personal supervision of vaccination work, if it is to be properly carried out, I consider that it would be more satisfactory if the Sanitary Department alone were responsible for this work and were strengthened accordingly and given the entire administrative charge of vaccination under revised and improved conditions, extending the Act, making vaccination free to all, and consolidating the establishment in one cadre of paid vaccinators and Inspecting Officers.

In conclusion I desire to bring to the notice of Government the large amount of useful work done by the three Deputy Sanitary Commissioners during the year in inspecting vaccination work and reporting on the efficiency of the staff and work in almost all the districts of the Province.

W. C. ROSS, MAJOR, I.M.S.,

Offg. Sanitary Commissioner.

STATEMENTS.

Statement No. I.—Showing particulars of Vaccination in the

Number.	District.		Population of district according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the season.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Total.
						Male.	Female.	Total.		
1	2		3	4	5	6			7	8
Patna Division.										
1	Patna ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1609631	777	{ 13 60	5440 30522	4877 27560	10317 58082	793 968	10121 58002
2	Gaya ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2161010	458	{ 12 76	4306 33694	4144 33117	8450 66811	704 870	8364 66340
3	Shahabad ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1865660	426	{ 17 193	3061 32982	2365 27695	5426 60677	319 559	5278 60202
Total of Patna Division		{ By paid Vaccinators ... By licensed Vaccinators ... }	5636301	505	{ 42 329	12507 97198	11386 88372	24193 185570	576 776	23763 184844
Tirhut Division.										
4	Saran ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2289778	853	{ 5 69	1125 40943	1021 37519	2146 73462	429 1137	2131 78457
5	Champaran ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1908385	540	{ 2 50	592 35132	503 32100	1098 67232	549 1344	1079 66935
6	Muzaffarpur ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2845514	937	{ 6 79	1977 52094	1730 49143	3707 101237	618 1281	3423 100639
7	Darbhanga ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2929682	875	{ 7 60	1791 47363	1442 45015	3233 92378	461 1539	2764 92148
Total of Tirhut Division		{ By paid Vaccinators ... By licensed Vaccinators ... }	9973359	791	{ 20 258	5485 175532	4699 163777	10184 339309	509 1315	9397 338179
Bhagalpur Division.										
Monghyr ...		{ By paid Vaccinators ... By licensed Vaccinators ... }	2131381	543	{ 4 41	1460 42784	1403 42405	2893 85189	723 2077	2846 85162
9	Bhagalpur ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2139318	506	{ 12 51	2464 35040	2234 33763	4698 68803	391 1349	4337 68720
10	Purnea ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1989637	308	{ 10 49	2244 25645	1624 23611	3868 49256	383 1005	2217 46509
11	Santal Parganas ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1682973	344	{ 4 62	1010 23734	751 27692	1761 56826	440 916	1555 54290
Total of Bhagalpur Division.		{ By paid Vaccinators ... By licensed Vaccinators ... }	8143309	437	{ 30 203	7208 133203	6012 126871	13220 200074	440 1281	10953 256681
Orissa Division.										
12	Cuttack ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2109139	577	{ 11 63	9441 43576	7299 37836	16740 81442	1521 1292	10601 75603
13	Balasore ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1055568	506	{ 11 42	4850 10316	3356 16074	8206 35390	746 842	1669 30793
14	Angul ...	By licensed Vaccinators ...	199465	118	15	5971	5415	11386	759	7007
15	Puri ...	By paid Vaccinators ...	1023402	409	29	20838	18083	38921	1342	38578
16	Sambalpur ...	By paid Vaccinators ...	744193	194	13	12501	11448	23949	1812	23061
Total of Orissa Division		{ By paid Vaccinators ... By licensed Vaccinators ... }	5131707	573	{ 64 120	47630 68863	40186 59355	87816 128218	1372 1068	73909 8

districts of Bihar and Orissa during the year 1915-16.

Primary Vaccination.				Revaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.	
Successful.				Total.	Successful.	Unknown.	Primary.	Revaccination.		Primary.	Revaccination.	Number.	Ratio per 1,000 of population.	Number.	Ratio per 1,000 of population.
Under one year.	One year and under six years.	Total of all ages.	Unknown.												
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
4717	4915	0850	175	196	90	...	99'03	53'51	42'17	1'73	...	49853	30'97	369	'22
25775	30707	57861	39	80	80	...	99'82	100'0		'07	...				
2788	4240	8263	25	88	22	37	99'12	44'89	34'59	'29	43'02	67733	31'34	225	'10
27756	37576	66321	93	171	146	22	99'66	97'98		'13	12'86				
3674	1196	5124	73	148	93	18	98'42	71'53	31'85	1'33	12'16	51149	27'41	195	'10
24557	32875	59602	31	475	07	19	99'05	21'27		'05	4'00				
11179	10351	232'0	272	430	214	45	98'93	57'06	37'09	1'14	12'70	168735	29'03	789	'13
78088	99158	183784	163	726	323	41	99'51	47'15		'08	5'64				
1350	587	1965	64	15	7	...	95'06	46'66	34'76	3'02	...	83080	36'28	140	'06
30750	44392	77138	727	5	5	...	09'23	100'00		'92	...				
722	334	1069	6	19	8	2	09'62	47'05	35'76	'55	10'52	62207	32'59	122	'06
32551	33673	66746	68	297	236	7	90'81	81'37		'10	2'35				
2302	1044	3365	58	284	196	88	100'0	100'0	36'63	1'69	30'98	104130	36'59	151	'05
58521	416'9	100324	315	598	352	246	100'0	100'0		'31	41'13				
1652	1055	2744	3	469	112	204	90'38	42'26	32'50	'10	43'39	92735	31'05	277	'09
50930	40889	91910	7	230	106	6	09'74	47'32		'007	2'60				
6626	3050	0143	133	787	323	294	98'69	65'51	34'87	1'41	37'35	342152	34'30	699	'07
172782	16'554	336118	1117	1130	693	259	99'71	80'25		'33	22'92				
2130	690	2835	8	47	17	...	99'89	36'17	41'28	'28	...	87612	41'10	590	'27
30912	53747	85137	2	27	10	...	99'97	37'03		'002	...				
2235	1065	4254	70	361	189	8	99'69	50'99	34'83	3'13	2'21	74613	35'82	793	'37
38695	29879	68689	13	83	66	4	99'97	8'54		'02	4'81				
1156	998	2187	7	1651	541	4	08'95	32'84	25'37	'31	'24	57301	28'85	529	'23
30894	16953	48214	31	747	264	2	99'45	35'43		'06	'26				
1128	358	1520	7	206	108	7	08'19	54'27	30'56	'45	3'39	61517	32'67	322	'17
37103	16845	54168	56	2536	1595	179	69'87	67'67		'10	7'05				
6649	4011	10786	93	2265	843	19	99'28	37'66	33'31	'83	'83	281073	34'51	2235	'27
139694	117424	256208	102	3393	1935	185	96'85	60'31		'03	5'45				
4153	4695	10063	410	6139	2179	1194	98'74	44'08	42'63	3'87	10'44	135667	64'32	137	'06
38873	30973	74813	483	5334	2261	1518	99'32	54'93		'63	26'94				
550	946	1616	25	6537	4561	439	08'29	74'81	36'53	1'49	6'71	61900	58'72	344	'32
9878	17488	30524	62	4657	1058	3194	90'52	72'31		'20	68'53				
3131	3167	6416	229	4379	3270	362	06'65	81'80	48'57	3'26	8'26	7642	39'32	...	...
12176	21572	36792	730	343	206	22	97'20	64'17	36'73	1'89	6'41	48170	47'06	20	'02
15323	6525	21876	366	888	496	39	96'39	58'42	30'37	1'58	4'39	26865	36'09	29	'03
32202	33708	70347	1531	13907	7443	1604	97'10	60'94	38'66	2'06	12'18	280534	54'63	539	'10
51882	51628	111753	774	14670	6589	5074	95'09	68'66		'68	34'58				

Number.	District.	Population of district according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the season.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Total.
					Male.	Female.	Total.		
1	2	3	4	5	6			7	8
Chota Nagpur Division.									
17	Hazaribagh ...	1288609	183	{ 3	637	553	1190	396	1164
	... { By licensed Vaccinators ... }			{ 44	23235	21058	44291	1006	43945
18	Ranchi ...	1387073	195	{ 3	905	833	1798	599	1657
	... { By licensed Vaccinators ... }			{ 44	23328	21608	44936	1021	43782
19	Palamau ...	687710	139	{ 4	1546	956	2502	625	555
	... { By licensed Vaccinators .. }			{ 26	16011	14179	30190	1161	20899
20	Manbhum ...	1547576	373	{ 6	3762	2925	6687	1081	5737
	... { By licensed Vaccinators ... }			{ 41	27674	22822	50496	1231	43415
21	Singhbhum ...	694394	178	{ 9	4540	3960	8500	944	8221
	... { By licensed Vaccinators ... }			{ 11	6063	5362	11425	1038	10800
	Political States of Singhbhum. By licensed Vaccinators ...	148646	246	4	2862	2249	5111	1277	4851
Total of Chota Nagpur Division.		5754008	207	{ 25	11450	9227	20377	827	17334
				{ 170	99173	87276	186449	1096	176592
Total of Vaccine Department.		34638684	413	{ 181	84580	71510	156090	862	135358
				{ 990	573969	525651	1099620	1110	1069844
				{ 1171	658549	597161	1255710	1072	1205202
Total Dispensary Department ...		...	...	1	307	154	461	†200	285
Total Railways ...		...	...	...	867	423	1290	...	829
Total Cooly Department ...		...	...	...	10929	7421	18350	...	8854
Total Jails and Cantonments ...		...	...	2	12007	601	12608	*302	2421
Grand Total ...		...	...	1174	682659	605760	1288419	1097	127591

* Cantonment only.

† Darbhanga district only.

Primary Vaccination.				Revaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.	
Successful.				Total.	Successful.	Unknown.	Primary.	Revaccination.		Primary.	Revaccination.	Number.	Rate per 1,000.	Number.	Rate per 1,000.
Under one year.	Over one and under six years.	Total of all ages.	Unknown.												
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
534	613	1153	3	26	13	...	99.31	50.00	} 33.24 {	.25	...	} 46442	36.04	31	.02
27790	15814	43834	4	446	390	...	99.98	87.44		.009	...				
1166	472	1655	...	141	108	7	99.87	80.59	} 37.56 {	...	4.96	} 5.697	37.27	44	.03
35533	8148	43773	8	1154	931	103	99.93	88.58		.01	8.92				
245	124	515	16	1947	1130	202	95.94	64.45	} 46.25 {	2.88	10.36	} 23834	34.70	42	.06
21133	8352	29724	94	291	235	16	99.07	85.45		.31	6.49				
558	8904	4639	1097	950	591	25	99.97	63.71	} 34.92 {	19.12	2.63	} 63476	40.88	150	.09
22471	20535	43321	7	7081	4838	71	99.79	69.01		.01	1.00				
536	1571	8157	37	279	88	104	99.67	50.28	} 28.11 {	.45	37.27	} 29105	41.91	62	.08
6184	4497	10728	20	625	397	4	99.51	63.92		.18	.64				
3191	1333	4813	7	260	104	4	99.97	75.78	34.75	.14	1.53	5380	37.12	...	...
9039	5774	16119	1153	3343	1930	338	99.61	64.22	} 36.36 {	6.65	10.11	} 219764	38.19	329	.15
116652	58679	176223	140	9857	6985	198	99.87	72.31		.07	2.00				
65095	56924	129345	2781	20732	10753	2400	97.78	58.87	} 35.67 {	2.05	11.57	} 1292258	37.30	4593	.13
559098	487443	1064086	2296	29776	16531	5757	99.37	68.82		.21	19.33				
624193	514367	1193731	5077	50508	27287	8157	99.46	64.43		.42	16.14				
191	80	215	70	176	25	151	100.00	100.00	...	24.56	85.79	...	...	...	...
698	73	771	2	461	293	2	93.27	63.83	...	.24	.43	...	...	...	...
952	1104	3730	5124	9496	496	7311	100.00	68.46	...	57.87	76.99	...	...	...	...
349	183	2220	142	10187	6014	1026	97.41	65.64	...	5.83	10.07	...	...	...	...
626323	545807	1200667	1045	70828	35115	16347	99.46	64.81	...	.85	23.50	...	...	...	...

Summary.

	Total number of persons vaccinated.		Total number of operations performed.		Percentage of successful cases in which the results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccinations per 1,000 of population.	Total cost of Department.	Average cost of each successful case.
	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under 1 year.	One and under 6 years.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BY SPECIAL STAFF.												Rs. a. p.	Rs. a. p.
Statement (I) ...	1205202	50508	1205202	50508	99.46	64.43	1,171	1,072	624193	544367			
BY DISPENSARY STAFF.													
Statement III ...	285	176	285	176	100.000	100.00	1	* 200	131	80	35.67	1,12,333 0 2	0 1 5
BY OTHER AGENCIES.													
Railways, Cooly Depot, Jails and Cantonments.	12104	20144	12104	20,144	98.31	66.09	(a) 2	302	1999	1360			
Total ...	1217591	70828	1217591	70,828	99.46	64.81	1,174	1,097	626323	545807	35.67	1,12,336 0 2	0 1 5

* Darbhanga only.
(a) Cantonment only.

STATEMENT II.

Statement No. II.—Showing the cost of vaccination in the

No.	Circle and district.	European supervising officer.	Expen										
			Pay.	Native supervising officer.	Pay.	Paid vaccinators.	Pay.	Licensed vaccinators.	Pay.	Clerks.	Pay.	Peons, etc.	Pay.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	PATNA DIVISION.				Ra. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.
1	Patna ... ..	...	...	6	1,929 4 0	14	1,002 4 4	60	238 7 6	...	...	1	28 6 5
2	Gaya ... ..	...	...	5	1,825 0 0	12	966 11 10	76	188 2 6	...	...	...	...
3	Shahabad ... ..	...	...	5	2,009 11 6	17	962 9 10	103	218 13 6	...	...	...	...
	Total of Patna Division ...	...	...	16	5,763 15 6	43	2,931 10 0	239	645 7 6	...	...	1	28 6 5
	TIRHUT DIVISION.												
4	Saran ... ..	...	...	4	1,566 0 0	5	660 0 0	69	226 14 0	...	...	...	...
5	Champaran ... ..	...	...	3	1,218 6 11	2	273 0 0	50	262 13 0	...	...	...	...
6	Muzaffarpur ... ..	...	...	4	2,354 2 11	6	526 0 0	79	150 5 0	...	...	...	...
7	Darbhanga ... ..	...	...	4	1,667 9 2	8	559 5 8	60	86 9 6	1	60 0 0	...	...
	Total of Tirhut Division ...	...	...	15	6,806 3 0	21	2,018 5 8	258	726 9 6	1	60 0 0	...	...
	BHAGALPUR DIVISION.												
8	Monghyr ... ..	...	...	4	1,515 0 0	4	390 0 0	41	74 12 6	...	...	2	108 0 0
9	Bhagalpur ... ..	...	...	5	2,850 0 0	12	1,012 3 10	51	...	...	...	...	...
10	Purnea ... ..	...	...	4	1,545 3 11	10	939 3 10	49	30 0 0	...	...	...	...
11	Santal Parganas ... ..	...	...	7	2,225 12 7	4	343 11 8	62	19 9 0	...	...	...	...
	Total of Bhagalpur Division...	...	...	20	8,136 0 6	30	2,685 2 4	203	123 12 6	...	...	2	108 0 0
	ORISSA DIVISION.												
12	Cuttack ... ..	...	...	4	1,431 3 7	11	1,352 9 8	63	...	...	...	...	...
13	Balasore ... ..	...	...	3	1,211 15 9	11	537 15 4	42	...	...	...	...	...
14	Angul ... ..	...	...	3	2,076 4 8	...	.....	15	...	...	...	...	...
15	Puri ... ..	...	...	3	1,283 6 1	29	3,760 2 3	...	...	...	...	...	...
16	Sambalpur ... ..	...	...	3	1,260 0 0	13	1,519 3 7	...	...	...	...	2	42 9 3
	Total of Orissa Division ...	...	...	16	7,315 14 1	64	7,169 14 10	120	...	...	...	2	42 9 3
	CHOTA NAGPUR DIVISION.												
17	Hazaribagh ... ..	...	...	4	1,435 14 1	3	257 11 9	44	...	...	...	...	...
18	Ranchi ... ..	...	...	5	1,500 15 6	4	564 0 0	44	...	...	...	...	...
19	Palamau ... ..	...	...	3	1,153 1 9	4	225 3 2	26	...	...	...	...	...
20	Manbhum ... ..	...	...	3	1,105 0 0	6	428 11 10	41	68 0 0	...	...	...	...
	Singhbhum ... ..	...	...	3	1,200 0 0	9	651 2 2	15	...	...	...	...	...
	Total of Chota Nagpur Division	...	...	18	6,394 15 4	26	2,126 12 11	170	68 0 0	...	...	...	...
	Total of vaccine circle ...	...	...	85	34,417 0 5	184	16,931 13 9	990	1,563 13 6	1	60 0 0	5	178 15 8
	ESTABLISHMENT OF THE DEPUTY SANITARY COMMISSIONER, BIHAR CIRCLE.	...	...	1	7,200 0 0	...	...	...	...	2	930 11 9	3	302 4 1
	Ditto ORISSA CIRCLE ...	...	...	1	4,041 15 0	...	.....	...	...	2	971 14 3	2	177 0 0
	Ditto CHOTA NAGPUR CIRCLE.	...	...	1	6,232 8 0	...	.....	...	...	2	783 11 2	2	211 1 8
	Total ...	...	...	3	17,474 7 0	...	.....	...	...	6	2,689 5 2	7	690 5 9
	Total of province ...	...	...	88	51,891 7 5	184	16,931 13 9	990	1,563 13 6	7	2,749 5 2	12	869 5 5

Province of Bihar and Orissa during the year 1915-16.

Expenditure					Paid from						Number of all successful vaccinations and revaccinations.	Average cost of each successful case.
Total pay of establishment.	Travelling allowance.	Contingencies.		Total cost.	Imperial Fund.	Provincial Fund.	Local Fund.	Municipalities.	Native States.	Total.		
15	16	17	18	19	20	21	22	23	24	25	26	27
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.
3,108 6 3	1,421 3 0	...	230 15 6	4,850 8 9	...	3,759 11 0	170 0 0	920 13 9	...	4,850 8 9	68438	0 1 1
2,979 14 4	1,487 10 6	...	692 6 3	5,159 15 1	...	3,675 6 8	658 0 4	826 8 3	...	5,159 15 1	75641	0 1 1
3,191 2 10	1,481 2 3	...	38 2 3	5,056 7 4	...	3,069 3 9	160 0 0	927 3 7	...	5,056 7 4	65016	0 1 2
9,369 7 5	4,389 15 9	...	1,307 8 0	15,066 15 2	...	11,404 5 3	988 0 4	2,674 9 7	...	15,066 15 2	209005	0 1 1
2,452 14 0	1,295 9 6	...	234 0 0	3,982 7 6	...	2,966 9 6	196 14 0	819 0 0	...	3,982 7 6	79608	0 0 9
1,754 3 11	876 2 0	...	43 4 5	2,673 10 4	...	2,386 12 1	...	286 14 3	...	2,673 10 4	68255	0 0 7
3,030 7 11	493 9 0	...	341 6 0	3,865 6 11	...	3,115 4 11	...	750 2 0	...	3,865 6 11	104624	0 0 7
2,373 8 4	1,137 13 4	...	115 2 0	3,626 7 8	...	2,978 14 0	160 0 0	487 9 8	...	3,626 7 8	95237	0 0 7
9,611 2 2	3,803 1 10	...	733 12 5	14,148 6 5	...	11,447 8 6	356 14 0	2,343 9 11	...	14,148 6 5	347724	0 0 7
2,087 12 6	1,254 12 4	...	299 13 0	3,642 5 10	...	2,929 6 4	...	712 15 6	...	3,642 5 10	87999	0 0 7
3,862 3 10	668 5 6	...	225 6 0	4,755 15 4	...	3,678 5 6	411 5 4	666 4 6	...	4,755 15 4	74532	0 1 0
2,514 6 9	1,226 9 1	...	60 0 0	3,800 15 10	...	2,861 13 0	309 3 3	629 15 7	...	3,800 15 10	51206	0 1 2
2,588 8 3	2,335 9 0	...	123 5 6	5,047 6 9	...	4,658 7 7	...	388 15 2	...	5,047 6 9	57558	0 1 4
11,052 15 4	5,485 3 11	...	708 8 6	17,246 11 9	...	14,128 0 5	720 8 7	2,398 2 9	...	17,246 11 9	271295	0 1 0
2,836 13 3	1,022 4 6	...	143 0 0	4,002 1 9	...	2,641 8 1	596 0 0	764 9 8	...	4,002 1 9	89925	0 0 8
1,749 15 1	280 8 10	...	74 15 0	2,105 6 11	...	1,567 7 7	288 4 8	246 10 8	...	2,105 6 11	38609	0 0 10
2,076 4 8	1,466 0 0	...	46 2 6	3,588 7 2	...	3,588 7 2	...	...	...	3,588 7 2	9686	0 5 11
5,043 8 4	1,374 9 9	...	124 12 0	6,542 14 1	...	2,772 15 10	3,594 1 5	175 12 10	...	6,542 14 1	37595	0 2 9
2,821 12 10	786 12 0	6 4 0	76 8 0	3,691 4 10	...	2,111 11 6	1,427 11 3	151 14 1	...	3,691 4 10	22606	0 2 7
14,528 6 2	4,930 3 1	6 4 0	465 5 6	19,930 2 9	...	12,628 2 2	5,906 1 4	1,341 15 3	...	19,930 2 9	198421	0 1 7
1,893 9 10	1,223 11 5	...	128 12 0	3,046 1 3	...	2,788 5 6	...	257 11 9	...	3,046 1 3	46709	0 1 0
2,084 15 6	1,201 8 1	...	146 0 0	3,412 7 7	...	2,848 7 7	...	564 0 0	...	3,412 7 7	52111	0 1 0
1,378 4 11	1,036 6 10	...	49 15 9	2,464 11 6	...	2,239 8 4	71 15 0	153 4 2	...	2,464 11 6	31808	0 1 2
1,601 11 10	694 6 10	...	86 8 2	2,382 10 10	...	1,937 6 10	241 11 10	203 8 2	...	2,382 10 10	54056	0 0 8
1,851 2 2	777 12 6	...	80 4 0	2,709 2 8	...	2,426 4 10	...	112 0 0	170 13 10	2,709 2 8	24563	0 1 9
8,589 12 3	4,933 13 8	...	491 7 11	14,015 1 10	...	12,240 1 1	313 10 10	1,290 8 1	170 13 10	14,015 1 10	209247	0 1 0
53,151 11 4	23,542 6 3	6 4 0	3,706 10 4	80,406 15 11	...	61,902 1 5	8,285 3 1	10,048 13 7	170 13 10	80,406 15 11	1235782	0 1 0
8,432 15 10	2,831 2 6	...	633 5 5	11,947 7 9	...	11,947 7 9	...	...	...	11,947 7 9	...	...
5,190 13 3	3,242 11 9	...	764 7 6	9,198 0 6	...	9,198 0 6	...	...	...	9,198 0 6	...	...
7,230 4 10	3,191 3 2	...	362 0 0	10,783 8 0	...	10,783 8 0	...	...	...	10,783 8 0	...	...
20,854 1 11	9,315 1 5	...	1,759 12 11	31,929 0 3	...	31,929 0 3	...	...	...	31,929 0 3	...	...
74,005 13 3	32,857 7 8	6 4 0	5,466 7 3	1,12,336 0 2	...	93,831 1 8	8,285 3 1	10,048 13 7	170 13 10	1,12,336 0 2	...	0 1 5

B—DISPENSARY VACCINATION.

Statement No. III.—Showing Dispensary Vaccination in the Province of Bihar and Orissa during the year 1915-16.

District.	Number of dispensaries in each district to which a vaccinator is attached.	Average number of vaccinators attached to dispensaries during the year.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	Primary vaccination.					Revaccination.			Percentage of successful cases in which the results were known.		Percentage of unknown cases to total cases.	
					Total.	Successful.			Unknown.	Total.	Successful.	Unknown.	Primary.	Revaccination.	Primary.	Revaccination.
						Under one year.	Over one and under six years.	Total of all ages.								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Patna
Gaya
Shahabad
Saran
Champanan
Muzaffarpur
Darbhanga	1	1	200	200	200	129	71	200	...	...	...	...	100·00	...	...	...
Monghyr
Bhagalpur
Purnea
Santal Parganas
Cuttack
Balasore	261	130	85	2	9	15	70	176	25	151	100·00	100·00	82·35	85·79
Angul
Puri
Sambalpur
Hazaribagh
Ranchi
Palamau
Manbhum
Singhbhum
Total	1	1	461	*200	285	131	80	215	70	176	25	151	100·00	100·00	24·56	85·79

* Darbhanga only.

COMPARATIVE STATEMENT No. IV.

Comparative Statement No. IV.—Showing the number of persons primarily vaccinated, and the number of those per

Establishment.			Persons primarily							
			1906-07		1907-08		1908-09		1909-10	
			Total Number.	Number successfully vaccinated.	Total Number.	Number successfully vaccinated.	Total Number.	Number successfully vaccinated.	Total Number.	Number successfully vaccinated.
1			2	3	4	5	6	7	8	9
Government	...	...	...	...	...	...	...	...	...	...
Municipal	...	...	44127	42524	45895	43722	48330	44769	46047	43550
Local Fund	...	...	74590	72479	93848	91055	96959	97104	92291	91182
Native States	...	...	4920	4903	3885	3865	5581	5377	4269	4245
Dispensaries	...	...	1107	1088	961	806	689	591	586	472
Licensed Vaccinators	...	...	1061164	1051091	1057110	1046540	1005512	994418	1053044	1052100
Total	...	...	1185908	1172085	1201699	1185988	1157071	1142259	1196237	1191549

sons who were successfully vaccinated, in the Province of Bihar and Orissa in each of the undermentioned official years.

vaccinated.

1910-11		1911-12		1912-13		1913-14		1914-15		1915-16	
Total Number.	Number successfully vaccinated.	Total Number.	Number successfully vaccinated.	Total Number.	Number successfully vaccinated.	Total Number.	Number successfully vaccinated.	Total Number.	Number successfully vaccinated.	Total Number.	Number successfully vaccinated.
10	11	12	13	14	15	16	17	18	19	20	21
...	...	...	...	...	...	...	...	649	515	10277	10046
46553	44671	46769	44879	43379	42311	44167	42480	47235	45310	43099	41661
97068	95561	96381	95057	86551	85965	82592	81790	76264	75266	94056	84636
4970	4956	4964	4943	4641	4581	5587	5578	6745	6740	4851	4843
516	415	384	303	188	185	186	186	178	176	285	215
1118587	1109896	1135713	1128318	1133310	1126927	1149467	1143922	1114753	1109554	1065023	1059266
1267694	1253499	1284211	1273440	1268069	1259969	1281999	1273946	1245824	1237561	1217591	1200667

Statement No. V.--Showing particulars of vaccination

District.	Total number of persons vaccinated.		Total number inspected—								Percentage of	
			By Deputy Sanitary Commissioners or Civil Surgeons.				Native Superintendents or other Inspecting Officers.				By Deputy Sanitary	
			Deputy Sanitary Commissioners.		Civil Surgeons.		District Inspectors.		Sub-Inspectors.		Deputy Sanitary Commissioners.	
	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.
1	2	3	4	5	6	7	8	9	10	11	12	13
Patna ...	68501	548	7443	...	1674	243	30611	...	35612	...	10'86	...
Gaya ...	75110	1477	...	...	4184	...	18322	61	38008	6	...	...
Shahabad ...	65485	1001	6217	...	5376	...	13484	...	19249	...	9'40	...
Saran ...	80701	810	27050	...	5881	703	37201	2	59905	...	33'51	...
Champaran ...	68186	425	23462	...	8572	75	28520	...	27073	51	34'40	...
Muzaffarpur ...	104070	1595	...	...	19610	713	21837	...	42998	206	...	...
Darbhanga ...	95252	781	...	...	2244	81	17244	...	43311	...	...	...
Monghyr ...	88008	74	12001	...	1848	...	17631	...	44452	...	13'63	...
Bhagalpur ...	73151	2085	12950	...	1002	1632	16908	112	33162	158	17'70	...
Parnea ...	50726	2398	...	...	1679	11	8504	205	11066	1141	...	...
Santal Parganas ...	55845	3178	...	...	2697	1528	13514	307	30304	1033	...	...
Cuttack ...	90556	18311	8973	...	3906	59	10784	539	38468	130	9'90	...
Balasore ...	34503	12722	3854	...	1336	1209	2686	...	16127	1667	11'17	...
Angul ...	7007	4379	...	...	779	1766	3738	804	4190	2850	...	...
Puri ...	38606	1098	9241	...	1960	689	18806	64	23623	167	23'93	...
Sambalpur ...	23062	1434	...	...	2011	676	11062	238	11991	346	...	...
Hazaribagh ...	45806	1224	2122	...	815	...	7483	82	16749	315	4'63	...
Ranchi ...	49398	3011	1808	...	5936	...	6978	335	26935	...	3'66	...
Palamau ...	30553	2375	...	...	4613	126	6574	30	12321	700	...	...
Manbhum ...	49189	9510	7341	...	2548	1382	4283	1409	9148	1143	14'92	...
Singhbhum ...	19025	1142	11433	...	3140	314	8072	133	9601	182	...	...
Political States of Singhbhum.	4851	260	...	...	484	58	2042	...	2273	217	...	...
TOTAL ...	1217591	70828	133895	...	82485	10265	306184	4321	556626	10261	10'99	...

verified by Inspecting Officers during the year 1915-16.

inspection to total number vaccinated.						Percentage of cases found successful to total number inspected.								Percentage of successful cases reported by vaccinators.	
Commissioners or Civil Surgeons.		By Native Superintendents or other Inspecting Officers.				By Deputy Sanitary Commissioners or Civil Surgeons.				By Native Superintendents or other Inspecting Officers.					
Civil Surgeons.		District Inspectors.		Sub-Inspectors.		Deputy Sanitary Commissioners.		Civil Surgeons.		District Inspectors.		Sub-Inspectors.			
Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.		
14	15	16	17	18	19	20	21	22	23	24	25	26	27		
2.44	44.34	44.08	...	51.98	...	91.60	...	98.98	78.19	98.79	...	99.21	...	99.36	68.06
5.54	...	24.39	4.13	50.68	.40	...	...	100.00	...	04.69	42.62	95.35	50.00	99.40	64.50
8.21	...	20.59	...	20.39	...	87.22	...	96.92	...	87.94	...	96.95	...	97.42	30.49
7.28	86.78	46.09	10.00	74.23	...	93.25	...	98.80	57.46	68.90	100.00	98.86	...	98.09	73.33
12.57	17.64	41.82	...	39.70	12.00	91.3	...	99.93	53.33	99.70	...	99.50	78.43	99.65	71.29
19.03	44.70	20.98	...	41.31	23.35	...	...	99.05	53.81	98.67	...	98.98	65.91	99.78	58.31
2.35	10.37	18.10	...	43.26	...	...	...	08.48	82.71	99.22	...	98.80	...	99.68	33.49
2.09	...	20.26	...	50.50	...	99.24	...	99.13	...	98.61	...	99.93	...	99.95	36.48
1.37	78.27	23.11	5.37	45.33	7.57	99.83	...	90.60	76.77	99.83	62.50	99.79	87.97	99.84	71.89
3.30	.45	16.76	8.54	21.81	47.58	...	...	68.88	100.00	99.31	83.90	98.94	29.79	99.35	33.23
4.82	16.61	24.19	9.66	54.26	32.50	...	...	98.77	45.26	08.23	57.18	98.71	66.02	99.71	58.84
4.31	.32	11.90	2.94	36.95	.70	92.29	...	09.00	74.57	05.34	59.55	97.72	67.69	99.21	40.32
3.87	9.50	7.79	...	46.74	13.18	95.43	...	94.91	71.54	95.86	...	90.64	61.72	94.46	47.21
11.11	40.32	53.34	18.36	59.79	66.20	...	...	97.43	85.27	96.49	88.80	95.84	86.58	91.56	74.67
5.07	62.75	48.71	5.82	61.18	15.20	95.80	...	98.66	82.58	95.55	56.25	94.70	59.88	95.37	70.58
8.71	47.14	47.96	16.59	51.99	24.12	...	...	92.04	52.95	91.48	47.89	02.46	51.73	94.86	50.83
1.77	...	16.33	6.69	36.56	25.73	05.80	...	98.45	...	93.72	86.58	09.73	90.15	99.97	87.44
12.01	...	14.12	8.56	54.62	...	95.74	...	100.00	...	99.35	84.47	99.74	...	90.97	69.64
15.09	5.30	21.51	1.26	40.32	29.47	...	...	100.00	87.30	99.81	100.00	99.46	72.71	99.28	61.09
5.18	14.53	8.70	14.81	18.59	12.01	96.62	...	98.39	52.67	98.20	51.31	99.19	53.37	92.76	63.63
16.50	27.49	42.42	11.64	50.46	15.93	...	...	69.90	68.15	09.50	50.37	99.05	58.24	99.27	55.88
9.97	22.30	42.09	...	46.85	83.46	...	...	100.00	91.37	99.05	...	99.20	82.02	99.83	74.61
6.77	14.49	25.17	6.10	45.17	14.62	91.45	...	92.09	72.84	97.76	6.69	97.69	68.69	98.44	59.45

Statement No. VI.—Showing side by side the ratios, per 1,000 of population, of Deaths from

District.	1906-07		1907-08		1908-09		1909-10	
	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.
1	2	3	4	5	6	7	8	9
Patna ...	·58	50407	1·69	52260	2·94	52570	1·23	51589
Gaya ...	·28	72720	1·93	73980	2·68	72395	·62	74725
Shahabad ...	·11	52483	·71	50939	1·76	53759	·67	46311
Saran ...	·11	74338	·29	65785	·96	74035	·84	76930
Champanan ...	·10	49019	·38	57722	·80	56148	·44	63172
Muzaffarpur ...	·05	99054	·09	101292	·23	101612	·22	98808
Darbhanga ...	·09	80126	·11	89884	·13	75833	·29	83005
Monghyr ...	·46	83081	1·00	80846	·61	78958	·30	79069
Bhagalpur ...	·93	79717	1·25	76312	·15	71328	·24	77682
Purnea ...	·55	59430	·41	52054	·08	50937	·36	61698
Santal Parganas ...	·51	63028	·66	58350	·71	65509	·36	67015
Cuttack ...	·14	77025	·29	95087	·28	107484	·12	134160
Palasore ...	·80	37841	1·25	29806	·64	35811	·56	44340
Angul ...	...	8886	...	8283	...	9022	...	7602
Puri ...	4·72	40682	2·24	55482	·83	53920	·16	52438
Sambalpur ...	·004	25024	·14	27441	·17	28265	·04	27124
Hazaribagh ...	·04	43816	·23	48899	1·27	42294	·42	42659
Ranchi ...	·02	46315	·23	53933	1·48	44656	·81	46968
Palamau ...	·02	17615	·15	16241	1·19	27936	1·42	31133
Manbhum ...	·08	54690	·31	63508	·46	62937	·21	58160
Singhbhum ...	·009	19007	·12	18527	·22	22721	·42	17409
Political State of Singhbhum ...	...	4903	...	3987	...	5377	...	4393
Total ...	·39	139207	·67	1174618	·83	1194561	·45	1246390

small-pox and the number of successful vaccinations during the 10 years ending 1915-16.

1910-11		1911-12		1912-13		1913-14		1914-15		1915-16	
Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.
10	11	12	13	14	15	16	17	18	19	20	21
·30	45665	·09	48687	·07	48768	·17	48480	·48	57665	·71	68438
·07	68104	·07	69923	·008	66965	·03	67817	·10	65855	·68	75641
·04	39890	·02	36809	·006	47086	·09	53812	·32	62079	·45	65016
·07	86741	·03	83221	·006	85339	·06	81699	·06	80729	·15	79608
·02	59387	·03	60354	·07	55486	·02	63100	·10	64146	·14	68255
·03	101395	·05	102535	·04	101405	·01	103052	·09	105292	·24	104624
·07	84025	·06	83343	·01	93546	·06	93735	·24	97760	·41	95237
·11	85497	·09	89123	·08	84475	·48	89024	·46	89749	·42	87999
·26	74438	·43	80294	·41	77274	·31	75244	·35	75831	·38	74532
·39	63167	·24	59409	·14	56956	·22	60587	·30	58496	·38	51206
·07	67446	·08	61909	·19	60236	·27	64815	·18	53182	·37	57558
·007	139487	·002	153747	·01	137175	·01	134227	·06	113297	·69	89925
·41	56052	·19	63287	·006	68271	·11	69059	·90	53281	·90	38603
...	9353	...	8207	...	5906	...	7945	...	7680	·01	9686
·007	53738	·006	53619	·02	55642	·07	47269	·02	33820	·30	37595
·08	33399	...	33153	·04	25955	·05	25063	·02	27561	·75	22606
·01	50075	·006	46544	·02	46150	·02	51777	·03	48299	·49	46709
·07	57541	·02	48913	·004	51096	·01	49989	·03	50958	·12	52111
·11	21059	·008	24782	...	23683	·07	21459	·10	28327	·17	31803
·01	60086	·0006	60420	·005	61191	·02	61316	·43	73369	·63	54056
·08	26593	·004	22841	·05	20254	·09	23496	·45	25909	·28	19526
...	4956	...	4967	...	4581	...	5654	...	6742	...	5037
·10	1288594	·08	1293587	·06	1275440	·11	1298619	·22	280027	·42	1235782

Statement No. VII.--Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1915-16.

District.	Towns.	Number of births during the year ending 31st March 1910.	Number of deaths amongst infants under one year during the year ending 31st March 1916.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1916.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Patna	Patna	3220	666	2116	1st October 1884.
	Bihar	1341	212	935	1st April 1887.
	Dinapur	1109	231	795	28th January 1891.
	Barh	317	58	227	1st April 1887.
	Khagole	225	44	149	12th July 1910.
	Total	6212	1211	4222	
Gaya	Gaya	1916	763	1088	1st January 1883.
	Tikari	215	47	107	3rd „ 1891.
	Daudnagar	386	84	224	Ditto.
	Total	2517	894	1419	
Shahabad	Arrah	1424	293	1272	20th July 1885.
	Buxar	434	77	386	1st April 1887.
	Dumraon	526	114	183	Do.
	Jagadespur	333	68	341	20th December 1890.
	Sassaram	891	129	818	1st April 1887.
	Bhabhua	212	31	280	Ditto.
	Total	3820	712	3283	
	Total of Patna Division.	12549	2817	8924	
Saran	Chapra	1495	306	752	1st April 1887.
	Revelganj	905	146	269	12th December 1890.
	Siwan	57	75	329	1st April 1887.
	Total	2927	527	1350	
Chauparan	Motihari	350	92	204	1st April 1887.
	Bettiah	850	159	518	Ditto.
	Total	1200	251	722	

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1915-16—contd.

District.	Towns.	Number of births during the year ending 31st March 1916.	Number of deaths amongst infants under one year during the year ending 31st March 1916.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1916.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Muzaffarpur	Muzaffarpur ...	1209	278	974	1st January 1886.
	Sitamarhi ...	313	61	265	1st April 1887.
	Hajipur ...	706	128	744	1st May 1890.
	Lalganj ...	344	63	320	1st April 1887.
	Total ...	2572	530	2303	
Darbhanga	Darbhanga ...	1996	419	1028	24th May 1884.
	Roserha ...	340	81	204	3rd January 1891.
	Samastipur ...	282	51	152	25th July 1910.
	Madhubani ...	534	69	268	1st April 1887.
	Total ...	3152	620	1652	
	Total of Tirhut Division.	9851	1928	6027	
Monghyr	Monghyr ...	1878	364	1393	15th November 1882.
	Jamalpur ...	967	178	737	Ditto.
	Total ...	2844	542	2130	
Bhagalpur	Bhagalpur ...	1818	307	963	15th February 1884 withdrawn on 16th October 1895; re-extended on 18th August 1898.
	Colgong ...	204	28	55	Ditto re-extended on 19th December 1901.
	Total ...	2022	335	1018	
Purnea	Purnea ...	431	68	240	1st July 1887.
	Kishanganj ...	241	56	206	12th November 1892.
	Katihar ...	328	30	130	8th August 1910.
	Forbesganj ...	157	24	132	9th August 1912.
	Total ...	1157	178	708	

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1915-16—contd.

District.	Towns.	Number of births during the year ending 31st March 1916.	Number of deaths amongst infants under one year during the year ending 31st March 1916.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1916.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Santal Parganas ...	Sahibganj ...	495	62	351	1st May 1884.
	Deoghar ...	284	46	319	Ditto.
	Madhupur ...	325	39	263	22nd August 1910.
	Dumka ...	233	36	195	Notifications dated the 9th April 1884 and 23rd August 1910.
	Total ...	1337	183	1128	
Cuttack ...	Total of Bhagalpur Division.	7360	1238	4984	
	Cuttack ...	1160	260	1255	1st September 1884.
	Kendrapara ...	457	146	270	7th February 1888.
	Jajpur ...	370	118	107	Ditto.
	Total ...	1987	524	1612	
Balasore ...	Balasore ...	507	99	353	7th February 1888.
Puri ...	Puri ...	679	421	248	Ditto.
Sambalpur ...	Sambalpur ...	389	145	317	7th March 1895.
	Total of Orissa Division.	3562	1189	2530	
Hazaribagh ...	Hazaribagh ...	565	69	291	1st January 1885.
	Chatra ...	277	42	122	1st August 1885.
	Giridih ...	243	33	121	8th September 1910.
	Total ...	1085	144	531	
Ranchi ...	Ranchi ...	909	112	926	1st April 1887.
	Lohardaga ...	213	23	240	25th June 1892.
	Total ...	1122	135	1166	

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1915-16—concl'd.

Distriet.		Towns.	Number of births during the year ending 31st March 1916.	Number of deaths amongst infants under one year during the year ending 31st March 1916.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1916.	Date of extension Vaccination Act to town.	
1		2	3	4	5	6	
Palamau	...	Daltonganj	...	258	55	190	9th October 1890.
Manbhum	{	Purulia	...	354	45	329	1st January 1887.
		Raghunathpur	...	193	39	130	9th February 1894.
		Jhalda	...	202	27	56	9th July 1892.
		Total	...	749	111	515	
Singhbhum	...	Chaibassa	...	287	28	211	20th June 1892.
		Total of Chota Nagpur Division.		3501	473	2616	
		Total for the Pro- vince.		36823	7645	25081	

ANNEXURE II.

Provincial Statement.—Showing the different kinds of lymph

District.	Primary vaccination.											
	Direct from the calf.					With lanoline or glycerine lymph.					Arm-to-arm	
	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.
1	2	3	4	5	6	7	8	9	10	11	12	13
Patna	53390	53029	183	178	99·32	15111	15036
Gaya	75110	74688	301	121	99·43	...	...
Shahabad	55777	55235	453	89	99·02	9708	949
Saran	80701	79192	703	806	98·13	...	...
Champan	68186	67952	130	104	99·65	...	...
Muzaffarpur	97082	96743	290	49	99·65	6988	6951
Darbhanga	95252	94952	274	26	99·68	...	...
Monghyr	88068	87972	26	10	99·82	...	...
Bhagalpur	71358	71258	28	72	99·86	1793	1775
Purnea	48116	47817	271	28	99·37	2610	2584
Santal Parganas	55845	55688	94	63	99·71	...	...
Cuttack	90556	85410	672	4,474	94·31	...	...
Balasore	34503	32596	192	1715	91·49	...	...
Angul	7097	6416	362	229	91·56	...	...
Puri	38606	36820	1056	730	95·37	...	...
Sambalpur	5415	5389	21	5	99·09	17647	16488	798	361	93·43	...	...
Hazaribagh	45806	45733	64	9	99·84	...	...
Ranchi	3730	3730	...	...	100·00	45668	45657	3	8	99·97	...	...
Palamau	30553	30333	107	113	99·27	...	...
Manbhum	42864	41684	77	1103	97·24	6325	6312
Singhbhum	19025	18888	80	57	99·27	...	...
Political States of Singhbhum	4851	4843	1	7	99·83	...	...
TOTAL	9145	9119	21	5	99·71	1165911	1149394	6165	10352	99·58	42535	42154

II.

used and their rates of success during the year 1915-16.

			Revaccination.														
vaccination.			Direct from the calf.					With lanoline or glycerine lymph.					Arm-to-arm vaccination.				
Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
32	43	99.50	...	...	...	...	...	548	373	159	16	68.06	...	...	...	...	...
...	...	...	...	...	...	...	...	1477	953	305	219	64.52	...	...	...	...	...
198	14	97.81	...	...	...	...	...	1084	283	745	56	26.10	7	2	5	...	28.57
...	...	...	...	...	...	...	...	810	416	307	87	51.35	...	...	...	...	...
...	...	...	...	...	...	...	...	425	303	80	42	71.29	...	...	...	...	...
33	4	99.47	...	...	...	...	...	1449	832	378	239	57.41	146	98	38	10	67.12
...	...	...	...	...	...	...	...	781	285	285	211	36.46	...	...	...	...	...
...	...	...	...	...	...	...	...	74	27	47	...	36.48	...	...	...	...	...
7	11	98.99	...	...	...	...	...	2085	1499	565	21	71.89	...	...	...	...	...
16	10	99.00	...	...	...	...	...	2398	805	1587	6	32.56	...	...	...	...	...
...	...	...	...	...	...	...	...	3178	1870	1113	195	58.84	...	...	...	...	...
...	...	...	...	...	...	...	...	18311	4515	4638	9158	24.65	...	...	...	...	...
...	...	...	...	...	...	...	...	12722	6013	2091	4618	47.30	...	...	...	...	...
...	...	...	...	...	...	...	...	4379	3270	747	362	74.62	...	...	...	...	...
...	...	...	...	...	...	...	...	1098	775	235	88	70.58	...	...	...	...	...
...	...	...	291	239	44	8	82.13	1143	490	554	99	42.86	...	...	...	...	...
...	...	...	...	...	...	...	...	1224	976	246	2	79.73	...	...	...	...	—
...	...	...	2271	1496	689	86	65.87	1640	1228	278	134	74.87	...	...	...	...	...
...	...	...	...	...	...	...	...	2375	1475	671	229	62.10	...	...	...	...	...
12	1	99.79	...	...	...	...	...	9510	6060	3237	213	63.72	...	...	...	...	...
...	...	...	...	...	...	...	...	1142	638	378	126	55.86	...	...	...	...	...
...	...	...	...	...	...	...	...	260	194	62	4	74.61	...	...	...	...	...
298	83	99.10	2562	1735	733	94	67.72	68113	33280	18703	16125	48.85	153	100	43	10	65.35

